

THE BLACK RANGE.

DEVOTED TO THE MINING INTERESTS OF THE BLACK RANGE COUNTRY.

VOL. I.

ROBINSON, SOCORRO COUNTY, N. M., FRIDAY, JANUARY 5, 1883.

NO. 39.

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THE BLACK RANGE

A Brief Description of Our Mines and Mining Districts

As Furnished by Dr. G. S. Haskell to the Director of the Denver Mint.

The Black Range is situated about fifty-four miles almost due west from Engle station on the main line of the Atchison, Topeka and Santa Fe railroad. The length of the range proper is about one hundred miles, and the mineral belt can be traced for eighty miles by about thirty miles in width. It is divided into seven districts, commencing at the north: First, Black Range district; second, Apache district; third, Cuchillo Negro district; fourth, Limestone district; fifth, Palomas district; sixth, Perche district; seventh, Lake Valley district. The third and fourth districts are not on the main belt, but form a spur of the range. Apache district has four towns, Chloride, Fairview, Roundville and Robinson. Black Range district has two, Grafton and St. Charles. Cuchillo Negro district has one, Edwards' Camp. Palomas district has one, Hermosa. Perche district has two, Kingston and Perche City. Lake Valley district has three, Nutt, Daly and Sierra City. The range is embraced by parts of three counties, Socorro, Grant and Dona Ana, in which the thousand claims are recorded. The line of the mineral is in a north-west and south-east direction through the high spurs of the range, up to and even west of the continental divide. The "geology of the country is made up of a red stratified quartzite, but principally of a gray and greenish gray porphyry, capped and flanked in many places by a hard, fine grained, crystalline limestone, forming ribs or dykes. Distorted and thrown from its natural horizontal bed by the erratic outpourings of porphyry, subsequently highly crystallized by the metamorphic heat, it is marked throughout this belt in a very disturbed state, but in many places still retaining its natural stratification, breaking through the porphyry, its limestone cap in contact with both, presents to the geologist a most remarkable series of true fissures filled with a quartz matrix. Their persistent structure and bold outcropping through the porphyry, through and across the stratified limestone cap, leaves very little doubt of their deep-seated nature. These veins vary from a few feet in width to over forty feet of solid quartz, carrying rich pay streaks from a few inches to over six feet, of gray copper, copper glance highly argentiferous with black sulphurets, chlorides and native silver, and gold more or less disseminated throughout the mass. Besides these veins of rich ores, beds of red quartzite are met with richly impregnated with native carbonate, red and black oxide of copper. The range as far south as the Perche district is in the midst of a well wooded and watered country abounding in limestone, iron and lead ores, the bold outcropping of which offer exceptional economical tunnel entrances for a thorough exploration of their mineral character and deposition, new and rich discoveries being constantly added to the number already named. The amount of high and low grade ores now exposed on the dumps of the developed and those now being developed is sufficient to place these mineral deposits in the front ranks of the mining districts of the world."

The Black Range district commences about eight miles north of Wild Horse creek and extends south to Bear creek, being some twenty miles in length by fifteen in width. There are some six hundred recorded claims. Those having the most development are as follows: Hiawatha, San Diego, Hawkeye, Iowa, Columbia, California, Grand Duke, Mammoth and Delphi. These are improved by shafts ranging from fifteen to thirty feet, the veins showing a width of from two to six feet, and the mineral from a few inches to two feet, assays ranging from thirty to five hundred ounces in silver and traces of gold. The Occidental has a shaft 220 feet in depth with several cross-cuts showing fine mineral of black sulphurets and free gold. On this property there is being a ten stamp mill, which will be ready to start about the middle of January on the ore taken from the mine, and will also do custom work. Everything bids fair for a successful run, and as this is the first undertaking of the kind in the range we expect it will be kept in ore to its full capacity for many months at least, as the bulk of the ore in this district are free milling and carry a large percentage of gold. The Occidental at the 170 foot level has a four foot vein that will mill-run \$52

gold and silver. A continuance of this will insure handsome profits as the works are extended.

The Minnehaha and the Great Republic are on the same lode and show strongly mineralized veins. These with others are holding off to await the development on the Occidental. Mining cannot be conducted like any other business, and if the ore should fail entirely in one the others are just as liable to strike a rich vein in the chimneys of ore that come to the very surface on these claims. Both are partially developed and the showing is sufficient to warrant a continuance. Assays from both show gold and silver from one hundred to three hundred dollars per ton.

The Goodenough, Ontario, Homestake and Shorty have shafts of different depths that show mineral of a paying character, and the want of capital to develop into mines is what is needed to bring them into prominence, or works that will purchase the ores and enable owners of claims to carry on the work.

The Montezuma and Alaska have shafts. The former is down ninety feet and shows some high grade ore. The latter is down 180 feet, with a drift thirty feet; in this a strata was struck holding surface water, which compelled a suspension of work until machinery was put in place to reduce the difficulty. This is now being accomplished and work on drift and shaft will be resumed before the first of January. Assays of these ores run from \$200 to \$500 in gold and silver. These properties are owned by Chicago parties, and indicate great promise, as the veins are large, cropping in places to a width of eighteen feet.

The Braxton, Buckeye and Ivanhoe are situated on the main belt of mineral and are developed by shafts. The first is down 100 feet and has a twenty inch streak of mineral, which carries free gold and black sulphurets and assays from \$500 to \$2,000. The second has a shaft eighty-five feet and another ten feet deep, showing the same character of ore with similar assays. The third has a shaft 470 feet deep. When it had reached a depth of eighty-five feet the rich sulphurets and free gold were struck and the tale of Aladdin was told to the world. Couriers were sent to the nearest telegraph station to inform the lucky owners, and then they incorporated for \$5,000,000 and put the stock on the market. This was disastrous, as they had not opened the property in a shape to warrant this capitalization. Work was continued in the primitive style, hoisting by hand, and the proper development retarded thereby, until the working capital was exhausted, since which time it has remained idle, to the detriment of the country, as the property is a good one. This, with the two former claims, has a strong mineralized vein, being true fissures between lime and porphyry. Prof. Silliman, of Yale, made assays of the ore from the Ivanhoe lode from \$200 to upwards of \$800,000 in gold and silver to the ton. Some ore was shipped and worked—the quantity, the returns and the place where reduced we have been unable to learn.

The Apache district joins the Black Range district on the south running from Bear creek to the divide between the waters of the Cuchillo Negro and Palomas creeks. It is about fifteen miles square. There are not less than one thousand recorded claims in this district. The May, Little Pittsburg, Patagonia, Nordhausen No. 1, Nashville, Royal Arch and Black Hawk have been opened by shafts or tunnels to depths ranging from ten to seventy-five feet, and show strong leads of good mineral.

The Buffum is situated on Dry creek, four miles northwest of Chloride. The croppings have free gold in quartz. The development is a shaft 180 feet in depth on a four foot vein, the mineral averaging about thirteen inches from the surface. Several mill-runs give returns of upwards of 100 ounces per ton. The ore is a copper glance with sulphurets and chlorides. There are about fifty tons on the dump. This is a strong vein and highly mineralized. The Ready Relief, Buckeye, Ontario, Centennial Bell, Solid Comfort, Mail Line, Fast Mail and Daisy are situated between Dry and Mineral creeks, and are developed by shafts from fifteen to sixty feet. All show the same strong mineralization of vein matter, the pay streaks varying from eight inches to two and a half feet, with assays from forty to 800 ounces per ton. The mineral is a copper glance with gray copper and some showing native silver.

The Sailor Boy, situated near Mineral creek, has a well defined mineral vein, considerable work has been done here, but unfortunately off the vein, with a view to striking the body at greater

depth by cross-cuts. The ore obtained from the small stringers indicate a different character of mineral from what is obtained from other claims in this vicinity. It is an argentiferous galena with considerable copper carrying gold. Assays give returns from \$20 to \$114 in gold and silver. The shaft is 175 feet in depth.

The Eureka and Miantenami are the properties of the Ivanhoe company. On the former there is a shaft 100 feet deep with a cross-cut fifty feet in the ore. The vein is six feet with a two foot mineral streak. Considerable ore has been shipped by the company to mill, returns of which have not been made known. Assays average 160 ounces. The ore is in copper glance. The latter claim has a shaft about twenty feet on the vein showing good mineral.

The El Paso and San Antonio are situated a little northwest of the Dreadnaught. The croppings are very bold and show a strong mineralized vein. The work of developing is a shaft forty-five feet in depth on the former showing mineral two and a half feet in width that will assay from 100 to 350 ounces per ton. The latter has a shaft fifteen feet deep in good ore twenty inches wide.

The Dreadnaught is developed by a shaft thirty-five feet in depth. The vein is eight feet and the mineral four feet wide, gray copper and copper glance, assaying from 150 to 375 ounces in silver and ten to thirty per cent copper, mill-runs eighty ounces silver and eleven and a half per cent copper. The walls are limestone and porphyry, and here the Devonian line comes to the surface, which is rarely seen in this district in that position.

The Silver Glimmer is situated south on the same vein with the Dreadnaught, and shows also a strong mineralized vein. It has a shaft forty-five feet and assays 255 ounces silver.

The Mountain Chief is situated southwest of the Dreadnaught. It shows a very strong vein, highly mineralized. There were forty assays made of this ore during the sinking of an eighty foot shaft, and the average of them was 643 ounces silver with traces of gold. The vein is three and a half feet wide with a twenty inch streak of ore.

The Silver Monument is situated near the continental divide at the top of Chloride gulch. It has a strong vein of mineral and is developed by shaft and tunnel. The vein is eight feet wide with three streaks of ore that will average about twenty-two inches. The character is borinite assaying from two to 400 ounces silver and eighteen per cent copper.

The Alta and Highland Mary are on Chloride gulch about nine miles from Chloride, and show strong mineralized veins, developed by shaft and tunnel 112 and fifty feet. Assays ninety to 130 ounces silver and from twenty to sixty per cent copper. The veins are four and six feet in width with from eighteen inches to two feet of mineral.

The Silver Bell, Commonwealth and Ledger are south of Chloride gulch near South Fork, on a well defined ledge of mineralized quartz. A shaft sixty feet deep on the former shows a vein of ore about two feet wide that will assay from sixty to 120 ounces silver.

The Black Knight and Extenavate are situated at the top of the range at South Fork. They show a large outcropping vein highly mineralized, developed by a shaft and tunnel. The ore streak is about ten inches, of high grade ore, being a sulphuret. Assays range from 640 to 900 ounces silver per ton.

The Wall Street and Wall Street No. 2 are situated two and a half miles due west of Chloride. The erosions have denuded the mineral veins so that they stand like walls of ore thirty to sixty feet high. The development on No. 2 is a shaft ninety feet deep and a tunnel of 100 feet, besides other smaller shafts in different places on the ledge. The ore is a Chloride highly impregnated with sulphide of silver, this metal being found in silicate of lime and porphyry together with native and wire silver. The vein is from three four to feet and the ore from eight to twenty-two inches wide.

The Apache, Nane, Old Vic, Sunrise, Chieftain, Black Bear, Vulcan, Monte Christo, Hidden Treasure, New York Central and U. S. Treasury are on the same and parallel veins south of the Wall Street lodes. They are all more or less developed by shafts from fifteen to seventy-five feet in depth, and show a similar character of high grade ore, assaying from forty to 400 ounces of silver, carrying some gold.

The White Signal has a shaft seventy-five feet and a tunnel thirty feet deep. The vein is forty feet wide and the mineral from two to eleven feet wide. Assays from eighty to 500 ounces silver. Mill-run returns sixty ounces silver

one and a half ounces gold and six and a half per cent copper.

The Grand Central, Hancock, Garfield, Hardscrabble, Prescott, Orwig, Buckskin, Dorsey, Morgan, Henry Clay and Iowa are situated west and south of the White Signal, all showing strong veins of mineral, with more or less ore on the dump.

The Colossal and Woods are situated a little south and east of Hagan's peak, and have strong mineralized veins. The development is a 100 foot shaft, an eighty foot tunnel and a drift of about forty feet. Some sixty tons of this ore have been worked at Denver with an average yield of \$400 to the ton. The vein is four feet wide with from twenty inches to two feet of mineral. This ore is assorted and graded into three classes, the second and third remaining on the dump as there are no facilities in the range for reducing it.

Lying almost directly south of Hagan's peak is the great Pye lode on which are located thirteen claims, all more or less developed. Silver Prince, Queensbury, Lost Heir, Starlight, Highland Chief, Way Up, King No. 2, King, Tidal Wave, Midnight, Little Kate, Silver Plume and Hamilton. The King No. 2 and Way Up have a joint shaft about sixty feet deep in high grade sulphuret ore, together with native and ruby silver. Assays from 200 to 900 ounces in silver. Mill-run 142 ounces. The Highland Chief ore is chlorides with sulphide of silver, and assays from 200 to 1,000 ounces. Queensbury and Silver Prince have considerable argentiferous galena on the surface. The Tidal Wave and Midnight are developed by a shaft off the vein, which has been cross-cut at fifty and eighty-five feet, showing a good body of ore that will mill-run sixty ounces in silver. The King is developed by shafts 175 feet, showing a pay streak that assays from seventy to 200 ounces in silver. Hamilton lode has a tunnel 100 feet, with a cross-cut thirty feet. This work was intended to be driven towards Hagan's peak, one of the highest in the range towards which the main veins seem to travel. The undertaking was premature and for the present abandoned, though we think if prosecuted would result in the finding of rich veins of mineral.

The Cuchillo Negro and Limestone districts occupy the Cuchillo Negro mountains, a spur of the Black Range. The former lies east of the Apache and the latter east of the Black Range districts. They contain several hundred located claims. The veins run in a northeast and southwest direction. The minerals are an argentiferous galena and the native oxides and carbonates of copper carrying silver. The formation is of the same character as the main belt. The principal developed claims are the Black Knife, German, Rifle Shot, New York, Campbell, Storm, Picayune, Letter B, Evening Star, St. Elmo, Star of Hope, Mexican, Moonshine, New Year, Ober, Champion, Blue Dandy, Ironsides, Gen. Arthur, Excelsior, Copper Queen, Star of the West, Good Enough and Little Lucia. The development work is in shafts and tunnels from ten to 200 feet. Assays as a general rule are much less in these claims than those further west, but the ores are of a class that cannot be too highly estimated as they are the natural fluxes to the higher grades on the main belt. The company owning the Black Knife have erected a water jacket smelter of ten tons capacity, that is completed and about to be fired up. It will add greatly to the importance of these districts. The Humboldt Mining company of Philadelphia own large interests in Limestone district and will push work vigorously. They employ a large number of men both here and in the San Andres and Caballo mountains, having their headquarters at Engle.

Palomas district is situated south of the Apache district on the main belt of mineral and has several hundred recorded claims, many of which are very promising for the amount of work done. The ore throughout the district is not so much exposed on the surface as in the Apache district, yet the veins are equally as prominent and well-defined. Developments show the mineral to be of a high grade. Palomas Chief has several small cuts and shafts that would indicate a deposit of considerable extent. A tunnel has been commenced that has a breast of ore the full size of the work and assays give returns of from 300 to 500 ounces of silver and some gold. The Antelope is a recent discovery in which at the depth of four feet ore was obtained that will assay upwards of 640 ounces per ton. It is black sulphurets. Arrangements have been concluded to sink one hundred feet on the vein for an undivided one-half interest in the property. The Hero, Hilda, Nourse, Massive, Hard

Cash, Silver Brick, Ida, Iron Mask and Summit have shafts of various depths, from fifteen feet upwards. Some of these claims show very fine carbonate ore that will assay eighteen to fifty ounces of silver to the ton, but the developments are so meager that it is a hard matter to determine the size of the deposits or veins; the characteristics of the formation surrounding them indicate deep-seated mineralization. Forlorn Hope, Josie, El Pastor, Globe, Day Star, Monitor, Kentucky, Little Giant and Columbia are somewhat developed and show strong, mineralized veins.

The saw mill that supplies the Range with lumber is situated about four and a half miles northwest of Grafton, and has a capacity of 10,000 feet per day, and 30,000 shingles. This has been kept almost constantly running during the sixteen months that it has occupied the field, and the demand has nearly kept pace with the supply. There are well stocked yards in each of the five towns. The mill has been running since September 1881 upon the timber in its immediate locality and it is estimated that 1,000,000 feet yet stands within easy reach. This gives a good idea of the extent of the timber growth of this country.

Perche district, situated south of the Palomas, has several hundred recorded claims and shows some of the most striking features of mineral yet discovered in this wonderful range. The float on the Solitaire and St. Clair lodes is the pure sulphides of silver. Assays of chunks varying in size from one-half pound to over three hundred pounds shows it to be from sixty-nine to eighty-three per cent pure. There have been several tons of this found on the surface and to the depth of a few feet. Considerable development has been done in trying to find a vein, but indications thus far show it to be a blanket contact between lime and porphyry, the mineral being found in a white talc highly impregnated with the sulphide. The Bullion, Superior, Illinois, Brilliant, Iron King, Hillsboro and Andy Johnson all show the same mineral but in a more diffused state. The first twenty-three tons of ore from the Bullion lode were worked at the sampling works of Tabor and Wurtzback, at Lake Valley, and yielded upwards of \$9,000. Other shipments have been made from these properties but we are unable to furnish the returns. This section of country is rolling, and erosions are much less marked here than in the districts above mentioned.

Lake Valley district is situated in the foot hills and shows strong indications of an extinct lake. Most parts of the country is covered by an iron cap, and where the rich deposits of chlorides are found it is of greater thickness than near the rising ground. This wonder is also a blanket contact in the same formation. The conjectures as to this chloride formation or deposit are varied, but from its situation and cap there is little doubt in our mind but that it is the action of thermal waters charged with the mineral under the pressure of the water of a lake which has slowly dried up and left the iron capping.

The Sierra companies, four in number, embrace some thirty-six claims. The development is by shafts and drifts, exposing the mineral in chambers lined with the chlorides of silver, some of which will yield sixty-five per cent. There is a forty stamp mill that was erected by the companies, and also sampling works owned by Messrs. Tabor and Wurtzback. Neither of these works are capable of reducing this horn silver, as the one cannot amalgamate it and the other cannot prevent it going off in the fumes, and the result is that there are now two or three hundred thousand dollars worth stacked in the ore houses. The lower grades of ore have been worked to advantage, and considerable bullion has been shipped to the Philadelphia market.

The climate of this section of New Mexico has all the health giving principles of Colorado without the cold rigors and deep snows of winter. It is especially adapted to those afflicted with pulmonary complaints. The mean temperature of the range is about sixty degrees, and the elevation at the different towns is from 5,000 to 7,000 feet above the sea level. The rainy season sets in about July, lasting two months. Gila springs are situated twenty-five miles from Chloride. These waters contain the different salts that are peculiarly adapted to the cure of rheumatism and other chronic disorders. The celebrated Arkansas springs cannot boast of more radical cures than have been performed here without the aid of medical advisers. They are in a beautiful valley with attractive natural scenery surrounding them, and at no great distance can be seen the abandoned homes of the cave dwellers, while others are decorated with the hieroglyphics and paintings of the Aztecs.